When dark (1825 h) a Reddish Hermit *Phaethornis ruber* was still active.

The rather early roosting of the Sombre Hummingbird could be related to the bird hunting habits of pygmy owls. We heard the Least Pygmy-Owl *Glaucidium minutissimum* calling nearby as early as 1729 h.

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A new subspecies of Red Knot *Calidris canutus* from the New Siberian islands

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The Red Knot has a largely disjunct arctic breeding range, with different subspecies described from several of the mostly discrete breeding areas (e.g. Piersma & Davidson 1992, Engelmoer & Roselaar 1998). Red Knots breeding in the Palearctic generally have been assigned to only one, the nominate *canutus* (*e.g.* Vaurie 1965, Johnsgard 1981), or two subspecies: *canutus* from the Taimyr peninsula and *rogersi* from further east - Wrangel island (*e.g.* Kozlova 1962, Portenko 1972) and, more recently, also Chukotka (Stepanyan 1975, Kistchinski 1988). Tomkovich (1990, 1992) further separated the easterly populations, assigning birds from only Chukotka to *rogersi*, with Wrangel island birds being grouped with Alaska breeding birds as subspecies *roselaari*. This subspecies is believed to migrate to the Americas, whereas *rogersi* migrates to Australia and New Zealand.

The subspecific status of Red Knots breeding on the New Siberian (Novosibirskie) islands, geographically central between the other Siberian breeding areas, has been the subject of debate. Roselaar (in Cramp & Simmons 1983) was uncertain as to which subspecies these birds belonged, but mapped them as *rogersi* (Roselaar 1983). Their short bill and wing length (measured from museum specimens) indicated closer similarity to birds from Chukotka (*rogersi*) than Taimyr (*canutus*) (Stepanyan 1990, Tomkovich 1990, 1992, Engelmoer & Roselaar 1998). Stepanyan (1990) and Engelmoer & Roselaar (1998) assigned Red Knots from the New Siberian islands to *rogersi*. However, Tomkovich (1990, 1992) found no plumage differences between specimens from Taimyr and New Siberian islands, but these birds did differ from the more easterly populations in having darker rufous on their upper body parts. On these grounds he retained New Siberian Island birds in *canutus*, but suggested that they migrate to the Pacific coasts of Asia/Australasia where they would co-occur with *rogersi*. Ringing data have recently confirmed that birds from the New Siberian islands spend their non-breeding season in north-western Australia (Lindström *et al.* 1999) and probably also New Zealand (Anon. 2000). This is in contrast to *canutus* from Taimyr which migrate through western Europe to West Africa (e.g. Piersma *et al.* 1992, Tomkovich *et al.* 2000).

During the 1990s a larger number of study skins, along with a recovery of a ringed bird, from the New Siberian islands have become available. This permits a reappraisal

TABLE 1

Bill length and wing length (mm) variation in three Siberian breeding populations of Red Knots, based on museum skins.

	Bill Range	Wing Mean	S.D.	n	Range	Mean	S.D.	n
Males								
C. c. canutus								
Taimyr Peninsula	29.0 – 36.1	33.27	1.99	30	158 - 171	163.75	3.07	30
C. c. piersmai								
New Siberian Is.	29.0 – 31.6	30.19	0.86	13	150 - 166	157.45	4.66	11
C. c. rogersi								
Chukotka	28.7 – 33.5	31.78	1.54	10	157 - 166	161.90	3.12	10
Females								
C. c. canutus								
Taimyr Peninsula	32.5 – 39.3	35.13	2.00	12	163-173	167.33	3.30	12
C. c. piersmai								
New Siberian Is.	31.3 – 34.4	32.97	0.89	9	158 - 173	163.07	5.23	7
C. c. rogersi								
Chukotka	31.6 – 35.3	33.52	1.17	9	162 - 170	165.56	2.87	9

of the subspecific status of Red Knots from the New Siberian islands. On the basis of plumage characteristics, morphometrics and migration routes differing from Taimyr *canutus* birds, and plumage and morphometric differences from Chukotka *rogersi*, this population is sufficiently distinct as to warrant separate subspecific status. The type specimen of the subspecies *rogersi* is an adult male in breeding plumage collected in spring from Shanghai, China (Japan at the time of description) (Mathews 1913). Since it is now known that birds breeding on both New Siberian islands and on Chukotka use this migration route there is some uncertainly as to which population this type specimen belongs. Tomkovich (1990) and Tomkovich & Serra (1999) confirmed that the original description of *rogersi* matches the plumage characteristics of the Chukotka population, *contra* the 'preference' of Engelmoer & Roselaar (1998) "to consider the Knots from New Siberian islands as *rogersi*". Furthermore the original description of 'hind-neck grey with dark shaft-lines' agrees with the colouration pattern of Chukotka birds but not that of New Siberian birds.

Specimens of Red Knots from the New Siberian islands held by the Zoological Museum of Moscow State University (ZMMU), Russia were used for detailed description of plumage characteristics. Comparisons of morphometrics were made using these specimens plus specimens in the Zoological Institute, St. Petersburg, Russia, measured previously by the author. Most specimens of Red Knots from the New Siberian islands are adults, collected in the period 5 June to 10 July. All plumage comparisons with other subspecies were made with birds collected during this same period of the year. Standard measurement techniques (*e.g.* Prater 1977) were used, with the exception that wing length was measured by pressing the wing against a ruler without straightening the wing (i.e. the flattened chord), so as to avoid risk of damage to the specimens. Sexes were compared separately since Red Knots have some sexual size and plumage dimorphism (*e.g.* Tomkovich 1992, Engelmoer & Roselaar 1998). Plumage colours were described according to Smithe (1974, 1975, 1981), with the number of each colour indicated in brackets in the following description.

Calidris canutus piersmai subsp. nov.

Holotype

Specimen no. R-81642, ZMMU, preserved as a study skin: adult male collected on 5 June 1956 at Bolshoy Lyakhovsky island, New Siberian archipelago by V. D. Lebedev (Plate 1). Collector's label contains the following information (in Russian): *Phalaropus fulicarius* male, island B. Lyakhovsky, southern coast, 5/VI.56. Coll. Lebedev V.

Paratypes

Nine specimens in ZMMU. Two adult females from the same locality as the holotype: R-81640 collected on 11 June 1956 by V. R. Filin and R-81641 collected on 14 June 1956 by V. D. Lebedev (sex of the latter bird with "?"). One adult female (R-114065) collected on 2 August 1994 at SW Kotelny island by E. E. Syroechkovski, Jr. Four males (R-114050-051, 066, 127) and two females (R-114052-053) collected on 10 July 1994 at western Faddeyevsky island by E. E. Syroechkovski, Jr. and Y. A. Red'kin. One

Plate 1. Holotype of *Calidris canutus piersmai* subsp. nov. Upper, dorsal and lower, ventral aspects

more specimen, male collected together with the latter birds on 10 July 1994 by Y. A. Red'kin, is deposited at The Natural History Museum, Tring (no. 2000.4.1).

Description of holotype

Crown, nape, mantle and scapulars mostly Sepia (119) with slight green and violet polish, mottled with Kingfisher Rufous (240), although some scapular feathers are Vandyke Brown (121) and some 'rufous' paired subterminal spots and edges are as light as Buff (124). Some mantle feathers have 'rufous' edges completely worn off. 'Rufous' on hindneck is slightly lighter than on the crown and mantle. Tertials are of the same pattern as other upperparts, but with almost no 'rufous' colour. Some rump and upper tail-coverts are coloured with 'rufous' of different tint. Supercilium, chin, throat, foreneck, breast and belly are Robin Rufous (340), whereas vent and undertail-coverts are about half and half white and 'rufous' with a few blackish spots on sides. Upper greater coverts of secondaries are a little bit darker than Olive Brown (28), greater coverts of primaries and lesser coverts are Vandyke Brown (121), median coverts are a mixture of feathers of these two colours. Many of the coverts, especially greater and inner, are fringed with white. Flight feathers are quite fresh. Bill 30.3 mm, wing 153 mm, tarsus 29.0 mm.

Etymology

The name is given in honour of Dr. Theunis Piersma, the Dutch ornithologist most deeply devoted to various worldwide studies of the Red Knot.

Diagnosis

The smallest in size among world subspecies of Red Knot. Differs from *C. c. rogersi* by more deeply rufous colour on both upper- and underparts, presence of rufous colour on hind-neck, more black on back and lesser development of white on belly, vent and undertail. Differs from *C. c. canutus* by absence of contrast between upper wing coverts and darker back feathers, and by more limited white on edges of median primaries.

Size and plumage comparisons

The difference in both bill and wing lengths (Table 1, and Tomkovich 1990, 1992) is the least with *rogersi*, being insignificant in females but significant in males (*t*-test: $p<0.01$ for bill, $p<0.05$ for wing), while it is well expressed in comparison with *canutus* ($p<0.01$ for bill in females and $p<0.001$ for bill and wing in males). Colours on the upper- and underparts of the body are the same as in *canutus* from Taimyr, but differ from *rogersi*. 'Rufous' edges on the upper body feathers are smaller than in *rogersi* and, together with paired subterminal spots, are deeper in colour, varying from Buff (124) to Kingfisher Rufous (240) or Cinnamon-Rufous (40), most often being Cinnamon (39) and Tawny (38). In *rogersi* these edges and spots usually are Pale Horn (92) or Warm Buff (118), sometimes of Cinnamon (39). The dorsal "rufous" colour of some *canutus* and *rogersi* specimens can be very pale, Drab-Gray (119D), or even approach white, Pearl Gray (81), but this was true of none of the available *piersmai* specimens.

The 'rufous' colour on the hindneck is similar to the crown and back, being only slightly lighter, unlike *rogersi* in which the hindneck is typically without 'rufous' colour.

The underparts vary in colour from occasional True Cinnamon (139) to more typical Robin Rufous (340), generally richer than in *rogersi*, which is usually True Cinnamon although varying from Pale Pinkish Buff (121D) to Robin Rufous (340). White on the belly, vent and undertail is less developed than in *rogersi*, and in males always with a varying number of Tawny (38) feathers among the undertail coverts (few *rogersi* birds have these).

Apart from size, differs from Taimyr *canutus* by colouration of wing. Main colour of upper wing coverts (apart from greater coverts and a number of bright feathers which moulted in the pre-breeding period in some specimens) is usually Vandyke Brown (121) or sometimes paler Drab (27), thus being on average darker than the Glaucous (79) colour of most *canutus* birds (some may have Vandyke Brown). As a result, at least on the bent wing, it lacks contrast with the dark colour of the bird's back, which is Sepia (119) fading to Fuscous (21), while it does contrast in *canutus*. In *rogersi,* the colour of the upper wing coverts varies a lot, but the contrast between these and the back feathers is absent even in specimens with light coloured upper wing coverts (Glaucous, 79) due to stronger light mottling of the birds' backs. The white outer edges of inner primaries that protrude from under greater wing coverts are narrower than in *canutus*.

A black-and-white photograph of a live adult male of *piersmai*, captured at a nest on Faddeyevski island on 10 July 1994, is published in Lindström *et al.* (1999).

Distribution

The new subspecies *piersmai* probably breeds on all large and most small islands of the New Siberian archipelago. Currently, breeding has been confirmed by the finding of nests or unfledged chicks on Faddeyevsky, Kotelny, Novaya Sibir and Bolshoy Lyakhovsky islands (Pleske 1928, Rutilevski 1958, Lindström *et al.* 1999). It is also very probable on Stolbovoi island, where a female was collected with an egg almost ready to be laid (Rutilevski 1963). In the non-breeding season, it can be found mostly on sea coasts of the East Asian-Australasian Flyway (Tomkovich 1990) south to Australia and, probably, New Zealand (Lindström *et al.* 1999, Anon. 2000, Tomkovich & Riegen 2000).

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